*भारतीय मानक*
***Indian Standard***

**IS 1582 : 2017**
**(Reaffirmed 2022)**

# वस्त्रादि — रेशम के धागे एवं कपड़े — डिगमिंग क्षति का निर्धारण

*( पहला पुनरीक्षण )*

# Textiles — Silk Yarn and Fabrics — Determination of Degumming Loss

*( First Revision )*

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Silk and Silk Products Sectional Committee, TXD 28

## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Silk and Silk Products Sectional Committee had been approved by the Textile Division Council.

Raw silk contains, besides fibroin and sericin, some traces of fat and mineral matter. Silk may be used in raw state, and afterwards either boiled off or not, according to the purpose for which it is intended. The silk gum and other impurities are generally removed from the silk textile materials by the process of boiling. Silk textiles are boiled off by passing them through heated soap liquor and hot water. Formulation of standard method of test for determining the quantity of sericin and other extraneous matter present in the material is, therefore, necessary. The method of test prescribed in this standard will be used as an aid in the determination of degumming loss of silk textile materials.

This standard was first published in 1968 and has been revised taking into account the practices followed in the silk industry.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard*

# TEXTILES — SILK YARN AND FABRICS — DETERMINATION OF DEGUMMING LOSS

*( First Revision )*

## 1 SCOPE

This standard prescribes a method for determining the degumming loss in silk yarn and fabrics. The method prescribed in this standard is generally applicable to silk yarn and fabrics wherein only sericin and other extraneous matter which would normally be removed during the degumming or boil off process.

## 2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the edition indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibilityof applying the most recent edition of the standard indicated below.

| *IS No.* | *Title* |
|---|---|
| 1070 : 1992 | Reagent grade water (*third revision*) |
| IS/ISO 105C10 : 2006 | Textiles — Tests for colour fastness: Part C 10 Colour fastness to washing with soap or soap and soda |
| SP 45 : 1988 | Handbook on glossary of textile terms |

## 3 TERMINOLOGY

For the purpose of this standard, the definitions given in SP 45 shall apply.

## 4 PRINCIPLE

A known amount of sample is boiled with mild soap and soda solution. The loss in weight is determined and expressed as a percentage of the dry weight of the sample.

## 5 SAMPLLNG

### 5.1 Sampling for Yarn

**5.1.1** *Lot (Yarn)*

200 kg of yarn from the same source shall constitute the lot. If the lot contains more than 200 kg of yarn, it shall be divided into sub-lots, each weighing 200 kg or less.

**5.1.2** Unless otherwise agreed to between the buyer and the seller, 10 hanks are randomly drawn from the lot. Ten gram are drawn from each hank to constitute the sample.

### 5.2 Sampling for Fabrics

**5.2.1** *Lot (Fabric )* — The quantity of fabric manufactured essentially under uniform conditions shall constitute a lot.

**5.2.2** Unless otherwise agreed to between the buyer and the seller the number of pieces to be selected from a lot shall be as given below. The pieces thus selected shall constitute the gross sample:

| *Lot Size*<br>(1) | *Sample Size*<br>(2) |
|---|---|
| Up to 100 | 3 |
| 101 to 300 | 4 |
| 301 to 500 | 5 |
| 501 and abov | 7 |

**5.2.3** From each piece in the gross sample about 25 g of fabric shall be taken out from at least 2 different parts. The parts shall then be cut into further smaller pieces and thoroughly mixed. The pieces thus collected shall constitute the test sample.

## 6 PREPARATION OF TEST SPECIMENS

**6.1** From the test sample, draw at least 2 test specimens each weighing about 5 g.

## 7 ATMOSPHERIC CONDITIONS

**7.1** The test shall be conducted in prevailing atmospheric conditions.

NOTE — Since the dry weights are determined, it is not necessary to condition the sample.

## 8 APPARATUS

**8.1 Air-Oven** — capable of maintaining a temperature of 105 to 110°C.

**8.2 Weighing Bottle** — with a stopper.

## 9 REAGENTS

**9.1 Quality of Reagents** — Unless specified otherwise, pure chemicals shall be employed in tests in the following combination and distilled water (*see* IS 1070) shall be used where the use of water as reagent is intended.

| *Type of Silk* | *Soap* (g/l) | *Sodium Carbonate* (g/l) |
|---|---|---|
| Mulberry and Muga | 5 | 1 |
| Eri/Endi | 3 | 1 |
| Tassar | 7 | 3 |
| Twisted/Thrown | 5 | 1.5 |

NOTES

**1** 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the test results.

**2** Neutral soap as per IS/ISO 105 C10 is suitable for this test.

**3** *p*H of the degumming liquor may be maintained between 9.5 to 10.5.

## 10 PROCEDURE

**10.1** Take a test specimen. Transfer it to a tared weighing bottle. Dry the specimen at 105 to 110°C to constant weight (about 2 hrs drying is sufficient) (*see* Note). Determine the, oven-dry weight of the test specimen.

NOTE — The consecutive weights taken at an interval of 30 min of drying should not differ by more than 2 mg.

**10.2** Depending upon the type of silk prepare the liquor solution of sodium carbonate and soap as per **9.1** in a beaker. Heat it up to 60°C. Enter the dried test specimen and gradually raise the temperature to boil and boil for 1 h (*see* Notes 1 and 2). Take out the test specimen, wash it thoroughly with hot water and dry it in the tared weighing bottle to constant weight (about 2 h drying is sufficient) in the oven. Determine the oven-dry weight of the test specimen after keeping the bottle in a desiccators for 10 min.

NOTES

**1** The material to liquor ratio should be 1 : 50.

**2** In case of high twisted material sodium carbonate shall be increased to 1.5 g/l.

**10.3** Calculate the percentage of degumming loss by the following formula:

$$S = \frac{(W_1 - W_2)\times 100}{W_1}$$

where

$S$ = degumming loss, in percent, by weight on oven-dry basis;

$W_1$ = oven-dry weight, in g, of the specimen before degumming; and

$W_2$ = oven-dry weight, in g, of the specimen after degumming.

**10.4** Repeat the procedure given in **10.1** and **10.2** with the remaining test specimen(s) and calculate the percentage of degumming loss by the formula given as in **10.3**.

**10.5** Calculate the average of the values obtained as in **10.3** and **10.4**.

## 11 REPORT

**11.1** Report the value obtained as in **10.5** as the degumming loss in percent, of the test sample.

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### Amendments Issued Since Publication

| Amend No. | Date of Issue | Text Affected |
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